THE WESTERN AUSTRALIAN
NATURALIST

Vol. 10 NOVEMBER 2, 1965 No. 1

HISTORICAL NOTES ON THE W.A. PITCHER PLANT, *CEPHALOTUS FOLLICULARIS*

Including the Provenance of Type Material

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INTRODUCTORY

The monotypic and highly intriguing genus *Cephalotus* constitutes a distinct family, *Cephalotaceae,* which is endemic in swampy near-coastal tracts of S.W. Western Australia between the lower reaches of Donnelly River in the west and Cheyne Beach (32 miles E.N.E. of Albany) to the east—a lineal distance of at least 158 miles. The recorded occurrence near Busselton (Gardner, 1959; Grieve, 1961) is apparently quite isolated and needs further investigation, while a report that *Cephalotus* formerly grew at the source of Pallinup River (Gray, 1963) is questionable—that very saline, dry countryside is a most unlikely, if not impossible, environment. Its *locus classicus* is the Albany region where, despite strenuous efforts by a few ardent conservationists, colonies of this low, herbaceous wonder plant are vanishing yearly as more and more bushland is cleared for farms, housing areas or sports-grounds.

WHO COLLECTED THE TYPE?

The first description and delineation of *Cephalotus* were published by J. J. H. de Labillardière (1806), but no information was given concerning the origin of the specimens used for diagnosis—excepting the vague "Terra Van-Leuwin." It has been commonly assumed that Labillardière collected this material, when visiting the south coast of Western Australia as naturalist with Bruny d'Entrecasteaux's expedition in December 1792. The great British botanist, Robert Brown, observed (1814) that "*Cephalotus* has been referred by its discoverer Labillardière to *Rosaceae*." The words of Dr. F. E. Lloyd (1942), noted investigator of carnivorous plants, reiterate this assumption:—

> "He (Labillardière) landed first 'on one of the islands of Esperance Bay and then on the mainland.' Here the naturalist of the expedition found the plant which he later (1806) described under the name *Cephalotus follicularis*."

Writing on the genus *Cephalotus,* as recently as September 1961, Professor B. J. Grieve thus opens his excellent account: "The West-

ern Australian Pitcher Plant was discovered in the Albany area by La Billardiere."

But it is indisputable that Labillardière *never* set foot on the coasts of King George's Sound. The only landfalls made anywhere in Australia by d'Entrecasteaux's expeditions were at Esperance Bay (W.A.) and south-eastern Tasmania. The most easterly occurrence known for *Cephalotus* is still nearly 200 miles from Esperance, where the only swamps are saline and utterly unsuitable as habitats for this plant. It is quite obvious that the illustrious French botanist could not have collected *Cephalotus* himself, and that he must have received dried examples from some other voyager—but from whom?

There are at least three possibilities from among the earliest visitors to King George's Sound, viz.:

1. **Archibald Menzies** on Captain Vancouver's expedition which discovered that harbour and spent 12 days there, from September 29 to October 11, 1791.
2. **Robert Brown** on Captain Matthew Flinders' *Investigator* which remained at the Sound from December 8, 1801, to January 5, 1802.
3. **L. T. Leschenault de la Tour,** botanist on the expedition of Nicolas Baudin who was in the vicinity of Albany for no less than 25 days between February 11 and March 8, 1803.

Menzies presented the greater part of his collections to Sir Joseph Banks, who had recommended him and actually drafted his instructions for Vancouver's 5-year expedition. Yet, in *The Banks Letters* (edited 1958, by W. R. Dawson of the British Museum), there is no mention of any plants collected on this particular voyage, nor can any existing collections of *Cephalotus* in European herbaria be definitely ascribed to Menzies.

Both Brown (January 1802) and Leschenault (February 1803) certainly collected *Cephalotus*. In his botanical *Appendix* (No. III) to Flinders' *Voyage* (1814, p. 600) Brown says of his own collection: "In marshy ground in the neighbourhood of King George's Sound, especially near the shores of Princess Royal Harbour—beginning to flower about the end of December." Eighteen years later he remarked (1832): "My earliest knowledge of the ripe fruit of *Cephalotus* was obtained from a single specimen, sent in 1815 by M. Leschenault, who had found the plant in February 1803 near the shores of King George's Sound, where I had gathered it in a less advanced state." Writing of King George's Sound, Leschenault (1816) thus refers to the Pitcher Plant:

> "In the dampest places one finds in great abundance the peculiar plant described by M. Labillardière, under the name of *Cephalotus follicularis*; I noticed that its cup-shaped leaves are always filled with water and with a great number of little flies."

Labillardière (1806) had concluded his original description of *Cephalotus* with a significant observation in Latin, of which the following is a free translation:

> "This [remarkable] genus communicated to the French Institute on July 8, 1805, I have been inclined (from the more important features) to link with the numerous *Rosaceae,* much as its fruits are still desirable."

This means that material must have been available to him *no* later than the first half of 1805. After sailing from Australia, Robert Brown himself did not reach England until October 1805, too late for Labillardière to make use of any specimens he may have brought back; but in a letter to Brown, dated August 30, 1804, Sir Joseph Banks acknowledges the arrival by H.M.S. *Calcutta* (which had left Sydney early that year) of 12 kegs containing dried botanical specimens. It is conceivable that this large consignment included *Cephalotus*, and that Banks may have lost no time in forwarding a sample to Paris for examination by Labillardière.

On the other hand, Leschenault was left, a sick man, at Timor on June 2, 1803. He subsequently explored Java and Philadelphia (U.S.A.) before returning to France in July 1807. However, the three gardeners on Baudin's expedition (Riedlé, Sautier and Guichenot) had meantime sent to the Natural History Museum of Paris living and dried plants, seeds and samples of wood from the coasts of "New Holland"; Antoine Guichenot returned to France in March 1804. It therefore seems highly probable that one or other of Baudin's gardeners transmitted the original specimens of *Cephalotus* gathered by Leschenault.

The Western Australian Pitcher Plant, *Cephalotus follicularis.*
—Photo: H. T. Reeves

The present writer has inquired at five principal repositories of Labillardiére's herbarium, viz.: Florence, Geneva, Paris, Kew and the British Museum. No sheets of *Cephalotus* in Geneva, Paris or London bear any indication that they were ever examined by its author. Florence does have a specimen accompanied by Labillardiére's handwriting. This Florentine sample consists of a very short inflorescence terminating a long scape, with a few normal leaves at the base but *no* pitchers; it carries a printed label, *Herb. Webbianum —Ex Herb. Labillardière,* at the base of which has been written in ink "Nova Hollandia et terra Diemen," and the whole has been pinned against three older slips of paper bearing Labillardière's detailed ms. diagnosis of the genus and species in Latin, which agrees closely with the actual printed text. The third, smallest piece of paper reads:—

> "ad Sarracenia? conf. Nepenthes? Saltem folia curvata aquam continet ut in Nepent.—aut Sarracenia. port du roi georges."

At least, Labillardière must have been aware that his unique new plant came from King George's Sound; but what has happened to the pitcher-bearing specimen that was obviously used in preparing the diagnosis and illustration? That seems to have been lost, and little would be gained now by denominating the imperfect specimen at Florence as a lectotype (or "holotype by monotypy"). As Dr. J. E. Dandy, Keeper of Botany at the British Museum, remarked (*in lit.,* 14/6/1965): "I do not know where Labillardière's type may be —but in such a case as *Cephalotus* this matters little, as the excellent plate by Poiteau published by Labillardière is as good as any specimen." One curious circumstance is that Robert Brown should have received (1815) from Leschenault a specimen of *Cephalotus* with mature capsules, whereas Labillardière remained ignorant of the fruits. Perhaps this can be explained by the fact that *some* of Leschenau't's material reached France with Guichenot in March 1804 (including the specimen or specimens handled by Labillardière), and that the collector brought further material of *Cephalotus* (including a sample in fruit) when he returned himself in July 1807—a year after the description had been published.

FURTHER HISTORIC COLLECTIONS

Four specimens, other than the probable but now imperfect type, are also in Florence, labelled thus:—

1. "*Cephalotus follicularis* La Billardiere n. holl. Spec."

   There is a second label reading "Herb. Webbianum/Ex. Herb. Desfontaines," and the sample may possibly be part of Labillardière's original suite, but lacking pitchers and without his personal annotation.

2. "*Cephalotus*

   Duplicates of the larger to be soaked and strapped. Spread under glass. The larger to be given—."

   This very faint and almost illegible writing seems to be in R. Brown's hand, apparently giving instructions to someone who

mounted or prepared the material for examination. Pitchers are present but not flowers.

3. *"1204.*

   Herb. Webbianum. *Cephalotus follicularis* Labill.
   Preiss Australie."

   A much better representation of this number, collected near Albany by L. Preiss in January 1841, is in Melbourne Herbarium (ex Herb. Sonder), consisting of six inflorescences and eight rosettes of pitcher-leaves.

4. *"Cephalotus.* Herb. Webbianum

   Drummond. Swan River 1845."

   A ticket numbered "7" is attached to the specimen which was probably obtained during J. Drummond's first visit to King George's Sound in Oct. 1840.

Duplicate specimens collected and labelled by Leschenault are present in the British Museum (Natural History) and in Geneva Herbarium; they each carry the following annotation:—

> "cephalotus follicularis/port du roi georges/cote sud-ouest de la/Nlle. hollande/ 1803"

—in Leschenault's unmistakable hand. Mounted on the same sheet at the British Museum is another specimen labelled: "Australia, 1802/Exped. Baudin Coll. Leschenault/ex Herb. Mus. Paris, 1816." The Geneva duplicate (with a long inflorescence, half a dozen normal leaves and one good pitcher) was probably acquired with the great French Herbarium of Benjamin Delessert to whom Philip B. Webb donated several hundred species of Labillardière's Australian plants.

As to other early gatherings of the Pitcher Plant, Captain Phillip P. King obtained living specimens in December, 1821, and Brown (1832) records that: *Cephalotus* was introduced in 1823 . . . by Captain King into His Majesty's Botanic Garden at Kew, where it flowered repeatedly and ripened seeds from which several plants have been raised." Another reference to these cultivated pitcher plants is made by W. J. Hooker (1831). William Baxter also brought back to England a plant that he had collected at King George's Sound in July 1829—it flowered in Knight's London nursery. Among the earlier collections at Kew are specimens from A. Cunningham, Collie, Harvey and Fraser.

During H.M.S. *Beagle's* famous world voyage, the great Charles Darwin spent eight days at Albany from March 6-14, 1836. He obviously viewed the West with a jaundiced eye, remarking that "we did not during our voyage pass a more dull and uninteresting time"; and his closing words, as the ship sailed out of King George's Sound on its course for Keeling Island, were: "I leave your shores without sorrow or regret"! Darwin had failed to see the amazing little Pitcher Plant which is not even mentioned in his book, *Insectivorous Plants* (1876).

Of happier frame of mind was James Backhouse, the visiting Quaker missionary, who did find *Cephalotus* on December 26, 1837,

and wrote enthusiastically of it (1843). A letter to Kew from James Drummond, written at Hawthornden Farm, Toodyay, on February 21, 1844, and reproduced by W. J. Hooker (1849), announces: "Tomorrow I start for Freemantle, where *Cephalotus follicularis* grows" —an astonishing statement for a man of Drummond's experience, when the nearest occurrence of *Cephalotus* was actually 170 miles away!

Collections of *C. follicularis* in Melbourne Herbarium number 14, coming from Albany, King River, Kalgan River, Torbay and Wilson's Inlets, Shannon River, Mt. Lindesay, and including an excellently preserved Brown collection (K.G.S., January 1802).

ACKNOWLEDGMENTS

The writer is much indebted to the Directors and Keepers of the great herbaria at Florence, Geneva, Paris, Kew and the British Museum (Natural History) in London, who reported on the early collections of *Cephalotus* held at their respective institutions. Especially is he grateful to the successive Curators of Florence Herbarium (Professors R. E. G. Pichi-Sermolli and G. Moggi), to the late Professor Charles Baehni, when Director at the Conservatoire et Jardin Botaniques, Geneva (Switzerland), and to Dr. Gilbert Bocquet, Curator of the Boissier Herbarium at the same institution, all of whom so willingly provided photographs of the critical specimens of *Cephalotus* in their charge.

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NEW INFORMATION ON THE DISTRIBUTION OF BIRDS OF SOUTH-WESTERN AUSTRALIA

By JULIAN FORD, Perth.

The following observations extend the known range and add to the distributional knowledge of some birds of South-Western Australia as listed by D. L. Serventy and H. M. Whittell in their *Birds of Western Australia* (1962, 3rd edn.). Certain eeologieal faetors influeneing the distribution of these birds are diseussed where pertinent.

Purpureicephalus spurius. Red-capped Parrot.

Over most of its range ineluding towards its northern limit, this speeies is assoeiated with the marri, *Euealyptus calophylla* (A. Robinson, *W. Aust. Nat.,* 7, 1960: 109) and although this tree forms dense forest to as far north as Dandaragan, the parrot has not been reported in literature north of Gingin. However, Mr. C. L. E. Orton informed me (*pers. comm.* June 15, 1964) that on several oeeasions in the 1930s he found the King Parrot nesting in hollow limbs of marri gums at Dandaragan.

Calyptorhynchus banksii. Red-tailed Black Cockatoo.

In the Darling Range jarrah forest belt between Armadale and Collie, this speeies is present in small numbers for the period between Oetober and June inelusive, and possibly for the whole year although it seems that a post-breeding migratory movement northwards in the late spring and early summer and a return movement southwards in the autumn are undertaken in the Darling Range analogous to the movements made by the White-tailed Blaek Coekatoo, *C. baudinii,* on the Swan eoastal plain. Observations illustrating the frequeney of oeeurrenee are set out in ehronologieal order: 7